

Preparation and Characterization of Functional Silica Hybrid Magnetic Nanoparticles

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Supporting Information

Amine quantification by Hermanson method

For the preparation of the TNBSA 0.01% solution, 20 μ L of TNBSA 5% reagent were diluted in 10 mL of sodium bicarbonate buffer (pH = 8.5). All other solutions were prepared in Milli-Q water and the pH was adjusted by adding either dilute sodium hydroxide aqueous solution or HCl.

The glycine standard stock solution (A) (10 mg/mL) was prepared by adding 1 g of glycine in 100 mL sodium bicarbonate buffer, pH = 8.5. This stock solution was diluted by pipetting 200 μ L in 10 mL of bicarbonate buffer (pH = 8.5).

6 standards were prepared from this stock solution (B) (200 μ g/mL) with the following concentrations of 0, 2, 8, 10, 15 and 20 μ g/mL. Therefore, 0, 100, 400, 500, 750 and 1000 μ L respectively were diluted in 10 mL bicarbonate buffer (pH = 8.5).

0.5 mL of TNBSA 0.01% solution was mixed with 1 mL of each standard (0, 2, 8, 10, 15 and 20 μ g/mL) in 5 mL vials and the solutions were incubated at 37°C for 2 hours. Samples were treated accordingly.

After the incubation time 0.5 mL of sodium dodecyl sulfate (SDS) 10% solution and 0.25 mL HCL 1M solution was added to each vial and carefully mixed for 10 minutes. Absorbance was measured at 335 nm using a quartz cuvette on a Jasco V-670 Spectrophotometer.

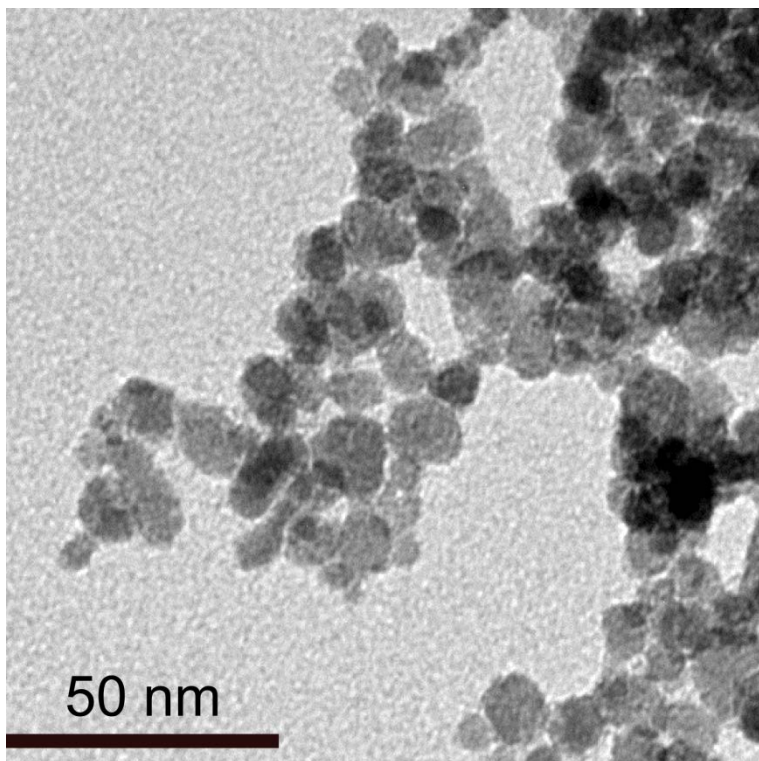


Figure SI-1: TEM picture of naked SPIONs (scale bar 50 nm)

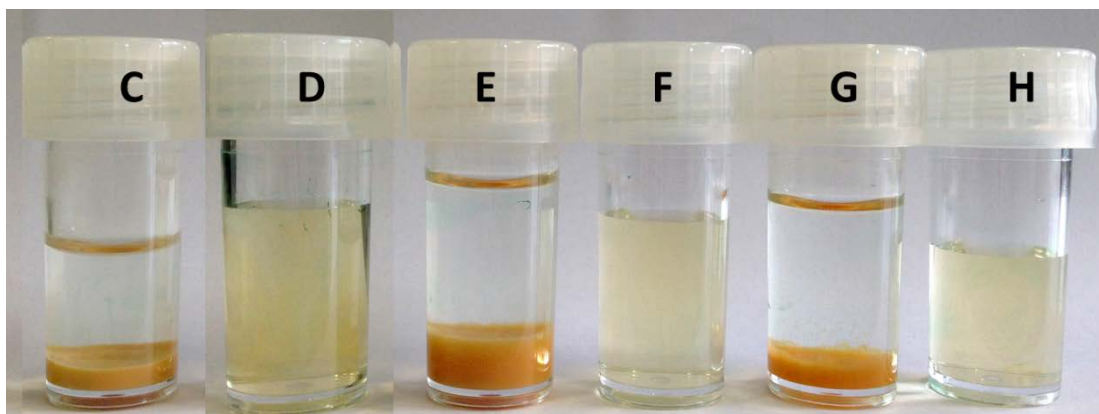


Figure SI-2: Flocculation of SHMNPs in water - samples D, F, and H (0 wt% APTES) and samples C, E, and G (25 wt% APTES)

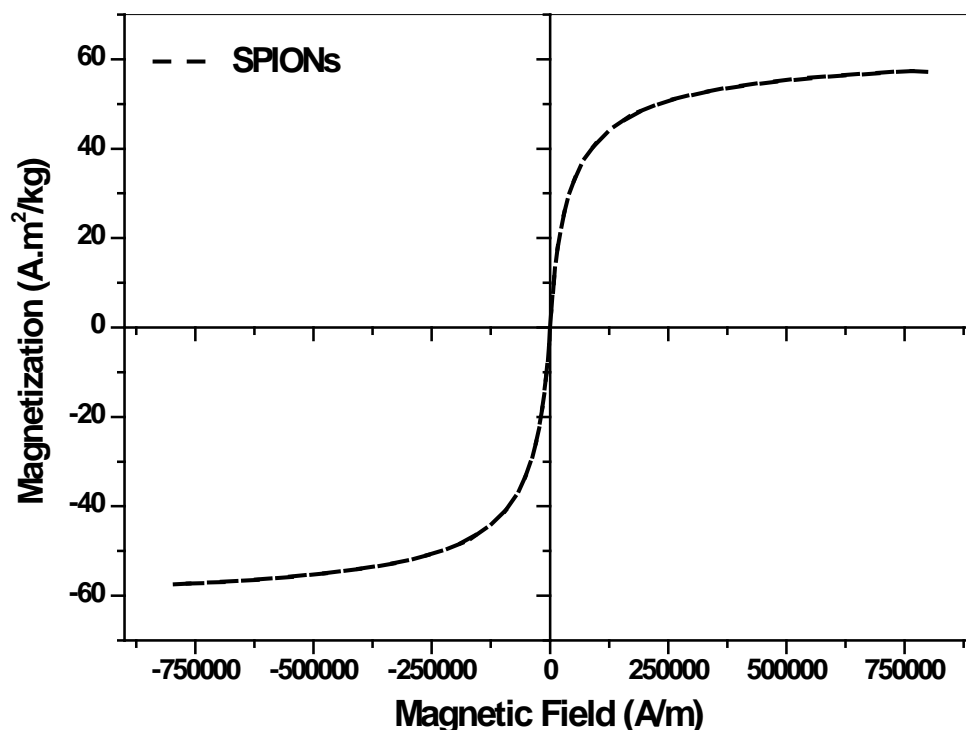


Figure SI-3: Magnetization curve (M-H) of the **bare, i.e. uncoated** SPIONs synthesized by chemical coprecipitation method.